

CURVED BODY AND WEARABLE DEVICE THEREWITH

CLAIM OF PRIORITY

[0001] This application is a Continuation of U.S. patent application Ser. No. 14/628,575 filed on Feb. 23, 2015 which claims, pursuant to 35 U.S.C. §119(a), priority to and the benefit of the earlier filing date of a Korean Patent Application filed in the Korean Intellectual Property Office on Feb. 22, 2014 and assigned Serial No. 10-2014-0020974, the entire contents of which are incorporated herein by reference.

BACKGROUND

[0002] 1. Technical Field

[0003] The present disclosure generally relates to an electronic device that is worn on a human body.

[0004] 2. Description of the Related Art

[0005] Methods for a user to carry a portable electronic device include carrying the device in the user's pocket or bag, holding the device in the user's hand, or carrying the device by wearing it on a predetermined location of a human body. A wearable device can be worn on various parts of the human body and used.

[0006] Wearable devices may be worn on the human body in various ways as follows:

[0007] 1. A wearable device may be worn on a human body such as a wrist like a watch or band;

[0008] 2. A strap-type wearable device may be worn on a human body like a necklace; and

[0009] 3. A glasses-type wearable device may be worn on user's face;

[0010] 4. A clip-type wearable device may be worn by being clipped to a human body, clothing, or user's belongs; and

[0011] 5. There are many other methods for attaching a wearable device to a human body, belongs, or an accessory directly or indirectly.

[0012] In addition, a wearable device may include a body and a wearing part (a strap or band), and may be worn on various parts of a human body according to a configuration of the wearing part. The wearable device may be one of the following structures:

[0013] 1. a structure in which the body and the wearing part are integrally formed with each other and inseparable from each other;

[0014] 2. a structure in which the body and the wearing part are separable from each other and thus are changeable.

[0015] Currently available wearable devices have several deficiencies. For example, the body of the wearable device is mostly designed regardless of design aspects and the exterior of the body and the inner wearing part are mostly formed according to the same flat/curved shape or a basic design shape.

[0016] Such a shape is not appropriate to the wearable device and acts as a factor delimiting functions and design of the wearable device.

[0017] In addition, where the wearable device has the body and the wearing part are integrally formed with each other, the body and the wearing part are not changeable and thus there is a limitation to providing various designs and customized functions. Furthermore, if the body and the wearing part are separable from each other and changeable,

it would be possible to customize the wearable device according to a user's taste in view of an exterior design or function. However, there is a contradiction between the degree of fastening and convenience in removing the body, and deterioration of the wearing part caused by an individual using pattern or frequent replacement may cause a serious problem in the fixing stability of the device.

SUMMARY

[0018] In an aspect of the present disclosure a wearable device is provided which has a body exterior configured to be easy to wear and to smoothly perform functions, and that facilitates housing electronic parts in the body of the device.

[0019] In another aspect of the present disclosure a wearable device that is easy for a user to wear on the user's wrist is provided.

[0020] Another aspect of the present disclosure may be to provide a wearable device that includes a removable body and includes a wearing part that may be changed according to a user's taste.

[0021] Another aspect of the present disclosure may be to provide a wearable device in which a place where a biometric sensor is mounted is configured to easily contact the skin of a human body, and where the biometric sensor can be used as a personal auxiliary medical device.

[0022] Another aspect of the present disclosure is to provide a wearable device, which provides coupling and decoupling directions of a body, and thus can prevent or inhibit the body from being decoupled when being worn on a wrist.

[0023] According to an aspect of the present disclosure, a wearable device may include: a strap having a first end and a second end. The strap may include a substantially polygonal opening and a buckle formed at one of the first and second ends of the strap. A buckle part may be configured to fasten the first and second ends of the strap to each other by binding the opposite ends (i.e., the first and second ends) of the strap. A body may be configured to be coupled to the opening by being fitted into the opening or decoupled from the opening. The body may include a front surface and a rear surface, and may also include a display having a substantially polygonal shape when viewed from the top, on the front surface. A biometric sensor may be disposed on the rear surface of the body.

[0024] According to another aspect of the present disclosure, a wearable device may include: a body housing; a curved display disposed on a front surface of the body housing; a curved battery layered under the curved display; and a curved body including one or a plurality of substrates arranged between the curved battery and the rear surface of the body housing.

[0025] According to an embodiment of the present disclosure, the wearable device may include a wearing part that is changeable or replaceable (e.g., decoupled from the body) such that a user may select a wearing part according to the user's taste. Thus, the user can select a wearing part reflecting consumer's personality.

[0026] Another aspect of the present disclosure may be to provide a wearable device provided with a wearing structure that is able to respond to various wrist curvatures. For example, the a wearing part may be able to respond to various wrist curvatures, thereby improving wearability. The wearable device may include a body housing, a curved display disposed on a front surface of the body housing, a curved